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AGRICULTURAL BULLETIN

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Gordon R. Groves, Director of Agriculture

FREEDOM FROM HUNGER CAMPAIGN

In July last the Food and Agricultural Organisation launched a Freedom from Hunger Campaign in an attempt as one of the organisation's pamphlet put it, "to bridge the chasm between these two facts of contemporary life; man's continuing hunger and man's wonderful developing powers." Perhaps it is difficult for people in Bermuda to understand the meaning of hunger, but in many regions of the world people are suffering from an acute shortage of food and malnutrition. Bermuda, due to her prosperity, maintains a high standard of living and the majority of the people not only have adequate food, but the diet is usually well balanced. It may, therefore, be superfluous to write an article on this subject, but although we are not a food producing area, thought should be given to this subject even in Bermuda.

To maintain the high standard of living here, it is essential to import the bulk of the food supplies, but this does not prevent us from producing and encouraging the community to produce as much food, locally, as possible.

Food is obtained from the soil and from the sea. Man has used his developing powers to produce more and better food from the soil by the development of agricultural science. Science has likewise shown how more fish can be obtained from the sea, and how this sea food can be preserved. Bermuda is surrounded by the sea, where according to authorities on marine biology, and the experience of local fishermen, this source of food has not been properly tapped, or properly developed. An excellent report was prepared, at the request of the Trade Development Board, by Dr. J. E. Burdach, in which he introduced methods of developing Bermuda's fishing industry. It is a pity that more publicity has not been given to this report and more serious consideration given to its implementation.

While the Department of Agriculture encourages the production of vegetables and fruit, and is trying hard to maintain the small dairy industry, we cannot help becoming alarmed, at the rate at which good arable land is rapidly disappearing in the enormous building development in progress. The absence of any real attempt to preserve arable land and open spaces is to be deplored.

Throughout 1961, let us give this subject, "Freedom from Hunger," more thought and take action in preserving the remaining open spaces, and arable land. Encourage the home gardener to plant more fruit trees, citrus, bananas, peaches and pawpaws. Continue to assist the producers of vegetables to maintain the production of fresh vegetables, and lastly, give serious consideration to the harvest of the sea.

G. R. G.

ON THE FARMS

The high winds and torrential rains experienced during December have had their effect upon local crops. Particularly hard hit were the string beans, tomatoes and potatoes. Local string beans will consequently be in very short supply this month. Tomatoes, despite the unfavourable weather are available in good supply on the farms. At this time of year it is difficult to get tomatoes to ripen quickly with the result that there is considerable delay in getting harvested fruit to the market. Local potatoes will be available in increasing numbers during the month as farmers are able to get the full crop harvested. Yields have been light for the most part with few growers getting better than a four to one return.

An embargo is now in force on cabbage which means that local cabbage should start to sell somewhat better in the weeks ahead. There is ample to meet local demand.

Carrots, of course, continue to be plentiful although some of this produce is not of the highest quality. Carrots, more so than virtually any other vegetable, must be of high quality and well graded if they are to sell. Too often bunches of carrots are spoilt by the inclusion of one or more undersized or mis-shapen roots in an otherwise attractive bunch. Overcrowding and failure to adequately fertilize are common causes of poor quality carrots. Nematodes, if present in sufficient numbers, can also cause roughness and branched rooting of carrots. During November and December of last year a number of fields of carrots were badly infected with Leaf Blight, a fungous disease which attacks the foliage of the carrot. Copper sprays will control this disease.

Getting back to the supply of local produce, there are several small plots of lettuce which will be ready for harvesting this month and the first local strawberries should appear on the market late in the month.

Of interest to farmers, particularly those living in the Western parishes, has been the supply of fishmeal which was landed, unexpectedly, in Bermuda during November. The fishmeal, on its way from Curacao to France was off-loaded at the Dockyard when it became overheated in the holds of the ship. Fishmeal is quite a commonly used fertilizer and would no doubt enjoy greater use were it not for the very strong odour of the material. As far as food value to plants is concerned fishmeal contains anywhere from 7-10% nitrogen (by weight) and approximately 6% phosphorus. There is virtually no potassium in fishmeal which means that it is not a particularly well balanced fertilizer, and should be supplemented with potassium in some form. The nitrogen in fishmeal is in an organic form but nevertheless becomes available to the plants quite quickly once it is applied to the soil. For

best results this fertilizer should be banded, or broadcast and then turned into the soil, at the time of planting of the crop. A rate of application of 1000-1500 lbs. per acre would be ample.

I. W. HUGHES,
Assistant Director of Agriculture.

SEED POTATOES

Most of the seed potatoes for the 1960-61 plantings have now arrived in Bermuda from Canada. The physical appearance of the tubers was very good this season and the farmers have apparently been quite satisfied with their supplies. The decline in the quantity of Bliss Triumph seed imported this season is quite noticeable. It is doubtful if more than 400 barrels of this variety were imported. The variety Red Pontiac has gained in popularity at the expense of Bliss Triumph.

At the Botanical Gardens small plots are planted out with every variety of seed potato imported for the fall and winter season. Not only are all the varieties represented in these plots but also every source of seed. For example, there might be four growers in Canada supplying Kennebec seed for Bermuda. When the potatoes are inspected in the field in Canada the Canadian authorities assign the potatoes of each grower a number. When these seed potatoes arrive in Bermuda the Department of Agriculture acquires a barrel of every variety and of every number and these are then planted in demonstration plots.

The primary purpose of the planting of these trial plots is to permit us to check all of the incoming seed for diseases, particularly virus diseases. As the potatoes grow in these trial plots they are given periodic inspections and records kept on the occurrence of diseases.

The plots planted in October of 1960 produced very excellent potatoes with virtually no sign of the common virus diseases, leaf-roll and mosaic. The top growth was unusually rank for a fall crop. Inasmuch as these plots were representative of all the seed potatoes imported during the fall it is safe to say that this year's seed was of very high quality.

Sometime in February a new series of plots will be planted and these will represent all of the potato varieties planted by farmers for the Spring crop. Farmers are invited to stop at the Botanical Gardens and observe these plots as they grow and mature. It is interesting to see and compare the field appearance of the various varieties as well as to check on the incidence of disease. Amongst the varieties growing in the trial plots will be those of Avon and Fundy, two varieties being evaluated for suitability for growing in Bermuda. The Avon has thus far shown up very well and the fall planting even put out flowers, something which is rarely, if ever, done by other potato varieties in Bermuda during the fall.

I. W. HUGHES,

Assistant Director of Agriculture.

TAMARISK AS A TREE

Most Bermudians are familiar with the magnificent hedge and windbreak which is growing along the North Shore Road from Ducking Stool to Shelly Bay. Obviously planted by a person with considerable foresight, this hedge has grown to serve as a windbreak to the many thousands of persons who pass over the road during the course of any given year.

Many persons value **Tamarix gallica** or Seaside Spruce as a hedge plant, and fewer persons know it as a tree. Tamarisk has a natural tendency to branch and become bushy, but it is a simple matter to select a central branch of a young plant and train it upwards into a tree. To do this, all other branches, excepting the central leader are trimmed off, and the leader trained upwards, as straight as possible. Six feet of growth per year is possible, using a regular fertilizing programme. The rate of growth naturally decreases as the tree grows larger; this is due to the increased amount of foliage that the roots have to support.

During the first year of growing a tamarisk cutting into a tree, it is necessary to prune off side branches very frequently, so the rate of growth upwards is surprisingly rapid, especially during the summer months. Three to six feet of growth per year is not uncommon if the tree is fertilized and cared after. With this tall thin growth, staking is necessary until the soft growing wood hardens to form a sturdy trunk for the young tree. Compared with the casuarina, tamarisk is equally as hardy and withstands strong winds and salt spray to a very large degree. Tamarisk will make an excellent lawn tree, especially for those persons living on the seaside where it is often difficult to get plants to grow.

Invariably, where spruce has been permitted to grow wild for many years, and has the appearance of an impenetrable thicket; this too can be altered to form a tree if desired. By selecting the thickest and best trunks, and preserving them, other unwanted undergrowth can be cut away, leaving a trunk with a canopy of foliage above. This is a ready grown tree, and often has more character than one grown from a cutting.

Many more trees are required in Bermuda's landscape, especially in built-up areas where it is too commonly thought 'I do not have room for a tree'. Trees are required by the millions in Bermuda. They are needed urgently, in variety, to meet the many individual tastes and requirements. When planning your landscape, include tamarisk — use it as a tree.

J. HUBERT JONES,
Horticulturist.

"DO-NOTS" IN LANDSCAPING

This article is a continuation of the series on House Landscaping in Bermuda. Up to now we have discussed how to vary the planting scheme and model the garden in such a manner, that it takes on a natural appearance, so essential to the Bermuda landscape.

There are certain definite faults which occur in initial planting and which can be rectified with ease, if approached correctly.

The first fault and a common one, is the planting of hedges too close to the roadside. Frequently one sees, Hibiscus, Oleander and Match-me-if-you-can, planted in such a situation, that continuous clipping back is the only answer, to avoid them becoming a hazard to traffic and pedestrian. Through this constant cutting back, they show much bare and eventually dead wood, rarely being allowed to flower and consequently never seen at their best. By sacrificing a little land and planting further back, a far happier result may be achieved.

Where space is limited, then more erect growing plants such as Aralia, Olive Wood Bark, Pomegranate, Yew, Croton, Blue Sage, Nandina, Spirea, Tecoma stans, Tamarix and many others may be considered as alternatives.

A second fault lies in planting trees intended to line the roadway or drive to the house too close to that carriage way. They should be set far enough back to reach full size upon maturity. Lopping back of the branches offending the roadway, creates an ugly, off-balanced picture.

Thirdly, and still on the subject of close planting. Do not crowd more into the scene than you have room for. Far better to give one desirable plant room to develop into its best, than to crowd three struggling specimens into the same area.

When planting for annual borders or a kitchen garden, avoid the planting of deciduous subjects so near, that their leaves falling in the auntumn, become a troublesome worry in constant clearing from the crops beneath them.

One could go on and on, but finally, avoid the clashing of colours which are not compatible to one another. The women-folk are usually more expert at avoiding this type of fault than are men.

Through further issues of this bulletin, we will discuss specific plants and their many values in the Bermuda landscape.

DONALD J. MOORE,
Reafforestation Officer

VEHICULAR TRAFFIC OVER A WET LAWN

Noticeable after the very prolonged period of wet weather, is the soggy condition of some lawns. The wet condition is more apparent when there is heavy traffic over the lawn. Vehicular traffic, such as cars and trucks, turns a lawn with poor drainage into a mud heap. This is distressing, as car tracks or skid marks cause considerable damage to the grass in addition to its unsightly appearance.

Crab grass (Stenotaphrum secundatum) or St. Augustine as it is known in the United States, grows very rapidly during the summer months, and hardly at all during the cool winter months. Likewise, Bermuda Grass (Cyndon dactylon) is a rapid grower during the summer, but is extremely slow growing during the winter season. When damage is caused to these grasses, such as that caused by vehicular traffic over a wet or soggy lawn, then it takes these grasses a very long time to recover, grow, and restore the beauty of the original lawn.

The care for damage to lawns as described here is difficult — a better line of approach is simply to keep motor traffic off the lawns, especially during wet

periods. Often a simply constructed barrier, such as a fence, made with stakes connected with rope or heavy line at the top, is required to indicate that vehicles are not to drive on the grass. This simple barrier can be removed when no longer required. Posting a notice is sometimes effective, but so often ignored. The barrier need not be of heavy costly material, but rather should be of such materials as to be clearly visible to anyone approaching the lawn either by day or by night.

Next, it is advisable to look at the water-shed or that area of the surrounding property or countryside on which rain first falls, then drains to your property. More often than not some of the water can be diverted near its sources and before it reaches your lawn.

Drainage is, of course, a solution to the problem, but invariably is a costly procedure. Surface drainage should be considered when the lawn is constructed, but if not then it can be carried out as a secondary measure. Grading or trenching to conduct the water away from the lawn, can sometimes be carried out effectively. Failing this, under drainage might be necessary, entailing the laying of clay drainage pipes.

Drainage problems on the lawn and other places vary considerably. Some are easily rectified, others are not; but whatever the circumstances, consider the value of your lawn in terms of usefulness, beauty, and if you like, real estate value. You will readily agree, it is best to keep heavy vehicular traffic off the lawn during wet weather and if unavoidable it is worth the time and expense to carry out a drainage operation.

J. HUBERT JONES,
Horticulturist.

GARDEN CALENDAR FOR JANUARY

Flower Garden:

The New Year resolution for the garden should be to learn and profit from any errors made in 1960. Such errors would include: wrong planting time for a particular crop, such as Statice and other everlastings for the Floral Pageant; Gladiolus and Poinsettia for Christmas. Sowing or transplanting annuals too late to gain their best display. Not controlling pests as soon as detected. In actual fact it is far better to take steps to prevent their appearance, by adopting a regular spray programme. Finally not attending to other cultural details such as weeding, staking and tying, feeding and pruning until too late.

Everybody, both professional and amateur, continuously makes mistakes in the garden. The interest lies in attempting to rectify these errors, and by doing so, steadily gaining a little knowledge. The challenge of nature cannot be overlooked, however. She is fickle enough to turn a failure of last year into a prize-winning bloom of the next year.

Flower seedlings sown in October or November, should by now have been transplanted in their final quarters, and firmly established. A close watch should be kept for attacks by slugs, snails or cut worms, and precautions taken to prevent such infestations.

Persistent wind often experienced at this time of the year, can cause great damage to young seedlings in two ways. The first is by drying out the surface soil. The root system of the young plant will not have had time to extend

very far as yet, and will be dependent for its water supply from the top two or three inches of soil. The implication here is obvious, and sufficient water must be available at all times. A check received now, if not actually fatal, will prevent the plant from achieving its best, despite any later aid to cultivation. Secondly, the wind may easily work a plant loose, and a regular check must be made to ensure that your plants are all firm in the soil. Later, staking and tying in of the taller growing annuals will require attention.

Regular loosening up of the top soil, with the hoe or hand fork will maintain a friable condition, essential to good soil aeration and subsequent healthy growth.

Where you desire to grow your own Poinsettias for next Christmas, then basic preparations must start now.

See that a sufficient supply of containers are available, adequately prepared to give good drainage. A compost of good garden soil should be prepared. Where soil is light, then a little peat moss may be added to balance this. With heavy soils, then add sand to improve aeration. Do not plant in the heavier red clays, unless they are well mixed with other soils and sand. The addition of fertilizer to the compost, is not easy to advise upon, as soil types vary considerably. Initially, however, it is as well not to use artificials. If soil is poor, then an organic such as Hoof and Horn or Bone Meal may be incorporated in the mixing.

Cuttings may be taken at the end of the month and into February. They should not be taken until flowering is over, however. Sturdy wood from the current season's growth should be used. Cuttings from 10-15 inches will give the best results. They must be firmly planted, either singly in small containers or in groups of three or more in larger pots, tubs, etc.

After potting they should be placed in a sheltered, yet sunny position. Watering should be kept to a minimum, until signs of rooting become apparent.

DONALD J. MOORE,
Reafforestation Officer.

PLANTS — MISLEADING COMMON NAMES

Several frantic telephone calls were received by both the Director and the Assistant Director of Agriculture, after the publication of our Agricultural Bulletin for the month of October. On page 80, Vol. XXX, No. 10, under the heading "Noteworthy Plants" appeared the following:—"Aloe Arborescens.

Common in Bermuda. It is known to many residents as the "Red Hot Poker."

The name "Red Hot Poker" immediately reminded some of our readers of the campaign initiated by the Health Department some years ago, to eradicate plants belonging to the family Bromeliaceae. The Bromeliads have the unfortunate characteristic of forming the basal leaves of the plant into a cup-like receptacle which collects considerable quantities of fresh water. These plants then make ideal breeding places for mosquitos. Hence the campaign to eradicate these plants, and to dissuade people cultivating them in their gardens.

Two such Bromeliads, Aechmaea polystachya and Billbergia sp. were commonly known to most Bermudians as "Red Hot Pokers." There is yet a third plant with the same common name, Kniphofia caulescens, a plant not cultivated in Bermuda, but is a popular plant in many English gardens.

All of these plants mentioned, produce a long upright spike of flower which does remind one of a poker which has been heated red hot, but unfortunately this common name is very misleading because the four genic names mentioned here, apply to entirely different plants.

The subject of our notes under "Noteworthy Plants" in the October Bulletin is an Aloe, and this graceful flowering South African plant does not collect water in the base of the leaves, and is, therefore, quite safe to cultivate anywhere in Bermuda.

We do not recommend the cultivation of plants of the family Bromeliaceae, because of the fact that they do collect rain water, and, therefore, are objectionable in this respect. We are indeed most grateful to the readers who telephoned, which is a further proof of the interest taken in our monthly bulletin.

G. R. G.

VISITING HORTICULTURIST

In November of last year, Mr. Douglas Leuchars, Silviculturist to the Forest Division of the Uganda Department of Agriculture, was in Bermuda for a brief stay.

During this time, we were able to show him some of the activities of this department and he was very favourably impressed with what he saw.

Mr. Leuchars, who was a guest of his sister-in-law, Mrs. S. G. Woolfrey, whilst here, was at the end of a tour which has taken him to Florida, Mexico and British Honduras, for the purpose of studying conifers.

Visits of this nature are important inasmuch as free exchange of knowledge and refreshing ideas can be made and useful contacts established.

DONALD J. MOORE,
Reafforestation Officer.

WEATHER RECORDING STATION AT BOTANICAL GARDENS

Summary of Climatological data obtained at Botanical Gardens during DEC November, 1960.

Mean maximum temperature 68.2.
Mean minimum temperature 58.1.
Mean monthly temperature 63.1.
Absolute maximum 75.0 on December 12th.
Absolute minimum 50.0. on December 21st.
Rainfall 10.36 inches.
No. of rain days 22.